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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/657,978

09/09/2003

Kazunari Hanano

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1280

3624

7590

03/15/2006

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EXAMINER

KOVAL, MELISSA J

ART UNIT

PAPER NUMBER

2851

DATE MAILED: 03/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/657,978

Applicant(s)

HANANO, KAZUNARI

Examiner

Melissa J. Koval

Art Unit

2851

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 December 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-52 is/are pending in the application.
- 4a) Of the above claim(s) 4-6, 8-12, 16-18, 23, 24, 28-30, 32-36, 40-42, 47 and 48 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 25-27, 31, 37, 39, 43, 44, 46, 49, 50, 53 and 54 is/are allowed.
- 6) ☒ Claim(s) 1-3, 7, 13-15, 19-22, 38, 43, 45, 46, 51 and 52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 September 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>2/21/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

This application contains claims 4-6, 8-12, 16-18, 23, 24, 28-30, 32-36, 40-42, 47 and 48 drawn to an invention nonelected without traverse in the response of August 2, 2005. The Examiner requests that a reply to the final rejection also include cancellation of nonelected claims or other appropriate action (37 CFR 1.144) See MPEP § 821.01.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1-3, 7, 13-15, 19, 21, 22, 38, 45, 51 and 52 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

With respect to amended claim 1, the limitation “whereby the distance between the outgoing radiation surface and the angle portion converting member are substantially equal” is incomplete as another reference element or elements are required to explain what the claimed distance is equal to.

Claims 2, 3, 7, 13-15, 19, 22, 51 and 52 are rejected because they are depending from rejected claim 1.

With respect to amended claim 14 the limitation “the columnar light leading member is configured such that a length in one direction of the incident end surface becomes a smaller length in said direction at the outgoing irradiation end surface

Art Unit: 2851

becomes a smaller length in said direction at the outgoing irradiation end surface." is confusing. It is unclear if Applicant is attempting to claim a tapered columnar light leading member or something asymmetrical. Applicant's figures suggest a tapered member as do other dependent claims. Claim 21, 38 and 45 are rejected for the same reasons already applied to claim 14.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-3, 7, 13-15, 19, 21, 22, 25-27, 31, 37-39, 43, 46, 49, 50, 51 and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Tiao et al. U.S. Patent 6,227,669 B1.

See Figures 7A and 8A of '669 B1, for example.

Claim 1 sets forth: "An illumination apparatus comprising (See either illumination device 700 or 800.):

a small-plane light source having diffusion radiation characteristics (See LED 712 or LED 812.);

a columnar light leading member, having an incident end surface, an outgoing radiation end surface and a reflection surface, configured to reflect on the

Art Unit: 2851

reflection surface at least a part of a light ray from the small-plane light source collected from the incident end surface, thereby leading the light to the outgoing radiation end surface (See integrator 720 or wedged glass rod array 820.); and

an angle position converting member configured to convert an outgoing light angle intensity of the outgoing light from the outgoing radiation end surface of the columnar light leading member into a position intensity in a predetermined irradiation area (See polarization converter 730 adjacent converging lens 740, or lens array 830 adjacent converging means 840.), whereby the distance between the outgoing radiation surface and the angle portion converting member are substantially equal.”

Because all of the elements taught by Tiao et al. '669 B1 and applied in the rejection above are oriented with respect to each other such that none of them are angularly or asymmetrically oriented the plain language of the claim is thus met.

Claim 2 sets forth: “The apparatus according to claim 1, wherein

the angle position converting member includes a pupil forming member configured to form a pupil by using the outgoing radiation end surface of the columnar light leading member as a virtual light source, and

a position of the irradiation area is set in the vicinity of a position of a pupil formed by the pupil forming member.” See converging means 840 as shown in Figure 8 and light valve 850.

Claim 3 is rejected for the same reasons already applied to claim 2.

Claim 7 sets forth: “The apparatus according to claim 2, wherein a maximum

outgoing radiation NA of the columnar light leading member is configured to substantially match with an incident side NA when forming a pupil with a predetermined size by the pupil forming member." See Figure 8A.

Claim 13 sets forth: "The apparatus according to claim 1, wherein the columnar light leading member has a tapered shape such that an area of the outgoing radiation end surface is larger than an area of the incident end surface." See Figure 8A.

Claim 14 sets forth: "The apparatus according to claim 13, wherein the columnar light leading member has an anisotropy in a ratio of a size of the incident end surface and a size of the outgoing radiation end surface, and the columnar light leading member is arranged in such a manner that a direction of the larger area becomes a direction of a small ratio." See column 8, lines 34 through 47.

Claim 15 sets forth: "The apparatus according to claim 13, wherein the incident end surface and the outgoing radiation end surface of the columnar light leading member have shapes similar to each other." See Figure 7A.

Claim 19 sets forth: "The apparatus according to claim 1, wherein the columnar light leading member includes a rod constituted by an optical plane made of a transparent material." See the plurality of columnar light converging lenses 722.

Claim 21 is rejected for the same reasons already applied to claim 14.

Claim 22 is met for the same reasons already applied to claim 19.

With respect to new claims 51 and 52, see the Figures.

Claims 1, 13-15, 19-22, 51 and 52 are rejected under 35 U.S.C. 102(b) as being anticipated by Parker et al. U.S. Patent 6,224,216 B1.

Claim 1 sets forth: "An illumination apparatus comprising (See multimedia projector 30.):

a small-plane light source having diffusion radiation characteristics (See light sources 32 that may be comprised of LED arrays.);

a columnar light leading member, having an incident end surface, an outgoing radiation end surface and a reflection surface, configured to reflect on the reflection surface at least a part of a light ray from the small-plane light source collected from the incident end surface, thereby leading the light to the outgoing radiation end surface (See light pipes 38 as they connect to optical integrator 40.); and

an angle position converting member configured to convert an outgoing light angle intensity of the outgoing light from the outgoing radiation end surface of the columnar light leading member into a position intensity in a predetermined irradiation area (See one or more optical path lenses 42.), whereby the distance between the outgoing radiation surface and the angle portion converting member are substantially equal."

Because the elements such as optical integrator 40 (outgoing radiation surface) and optical path lens 42 as taught by Parker et al. '216 B1 and applied in the rejection above are oriented with respect to each other such that none of them are angularly or asymmetrically oriented the plain language of the claim is thus met.."

With respect to claims 13 through 15 and 19 through 22, see column 6, lines 46 through 67, and column 7, lines 1 through 18.

With respect to claims 51 and 52, see the Figures.

Response to Arguments

Applicant's arguments filed December 27, 2005 have been fully considered but they are not persuasive.

With respect to the rejection of claim 1 under Tiao et al. '669 B1, clearly "wedge glass rod array 820" is comprised by members that reflect internally.

In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that the features upon which applicant relies (i.e., Applicant's claimed "columnar light leading member" and surface of the "irradiation area" "do not have a conjugate relationship" as referred to on page 21 of Applicant's arguments.) are not recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Furthermore, with respect to the rejection of claim 1 under Parker et al. '216 B1, Applicant states on page 22 of his arguments that '216 B1 fails to teach an angle position converting member configured to convert an outgoing light angle intensity of the outgoing light from the outgoing radiation end surface of the columnar light leading member into a position intensity in a predetermined irradiation area, however no further

explanation or reasoning is given to support the argument. Thus the Examiner maintains the rejection above.

Allowable Subject Matter

Claims 25, 26, 27, 31, 37, 39, 43, 44, 46, 49, 50, 53 and 54 are allowed.

Claims 38 and 45 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

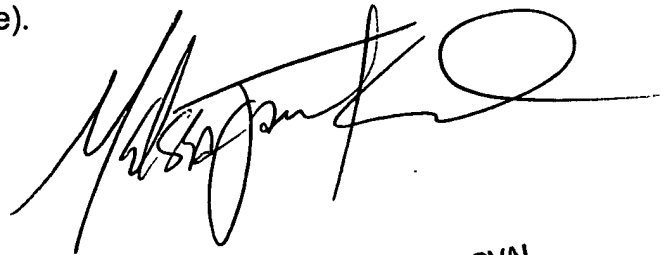
Art Unit: 2851

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Melissa J. Koval whose telephone number is (571) 272-2121. The examiner can normally be reached on Monday through Friday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Judy Nguyen can be reached on (571) 272-2258. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Melissa Jan Koval
Primary Examiner
Art Unit 2851
MJK

A handwritten signature in black ink, appearing to read 'Melissa Jan Koval', with a large, stylized loop at the end.

MELISSA JAN KOVAL
PRIMARY EXAMINER